



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region III
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Mr. William Smith
Paul C. Rizzo Associates, Inc.
220 Continental Drive
Suite 311
Newark, DE 19713

NOV 18 1991

Ms. Lorraine Pearsall
Clement International Corporation
9300 Lee Highway
Fairfax, VA 22031-1207

Re: Tonolli Corporation Superfund Site
Draft Risk Assessment Review; Request for Revisions

Dear Mr. Smith and Ms. Pearsall:

EPA and PADER have completed a review of the Draft Human Health and Ecological Assessment submitted by Clement for the Tonolli Superfund Site RI/FS. We have found that the document deviates significantly from the Risk Assessment Guidance for Superfund, and thus several fundamental revisions are required before we issue our approval.

Since the Human Health and Ecological Assessment makes use of conclusions presented in the Draft RI, and EPA and PADER have noted problems with these conclusions (See letter dated October 11, 1991), the revisions required for the RI Report will directly effect this document. We have also identified problems with the approach to a Baseline Risk Assessment, and the discussion of exposure pathways for both the current and future land use scenarios. The document presents various exposure scenarios and alternate risk calculations that are cited as "more realistic", but that do not adhere to EPA's Guidance, and thus will not be used in decision-making. In order to make the risk assessment a clear, concise and useful document for decision-making, we request that, if these alternate scenarios and calculations must be presented, that they be placed in an appendix to the report.

For your reference, the key reviewers of the Draft Human Health and Ecological Assessment included EPA's toxicologist, biologist, Bio-assessment Technical Assistance Group, headquarters staff members (OWPE and Guidance and Evaluation Branch), and PADER's project officer. The specific comments are presented in accordance with the document's format, and we have cited page and section numbers to assist you in your review.

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1. Pg. E-1 - 2nd paragraph - This introduction should include a description of the existing site conditions, not merely a discussion of the coal mining situation. At this point, we believe the presence of coal wastes has been sufficiently documented.

2. Pg. E-1 - last paragraph - The baseline risk assessment must be conducted without dividing the Site into two zones. The assumption that illegal access to Zone 1 of the Site can be prevented and should not be considered further is invalid. While this distinction may be useful during implementation of the remedy, it is not appropriate to make this division when evaluating the health risks posed by the current Site conditions.

If you feel strongly that this scenario should be presented in the document, please include it in an appendix, and not in the main body of the document. If you continue to present the Zone 1 and 2 break-out, you must present risks posed by contact with Zone 1 alone (incidental ingestion).

3. Pg. E-2 - 2nd paragraph - You should be advised that EPA, in an effort to be fully protective of public health, is concerned only with the reasonable maximum exposures. Presentation of the average scenarios can be included in the document, but should be secondary to the RME numbers.

4. Pg. E-2, 3rd paragraph - 25 ug/dl is presented here as the blood lead "level of concern". The document should clearly state that this level corresponds to a level of concern for adults, not for children, who may be sensitive to the adverse effects of lead at blood levels of 10 ug/dl or less. In addition, although reports of adverse health effects in adults occur at blood lead levels of approximately 30 ug/dl or greater, the average blood lead level of a typical adult is much less than 10 ug/dl. It should also be noted that there is no adequate means of measuring subtle adverse health effects in adults with blood lead levels in the range of 10-30 ug/dl.

5. Pg. E-3, 2nd full paragraph - Unless sufficient evidence can be presented to support the conclusion that the Tonolli Site area's projected land use will be commercial/light industrial, the risk assessment must evaluate a residential land use scenario (future conditions).

6. Pg. E-4, Ecological Assessment - Revise in accordance with the specific comments offered on section 6.0.

7. Pg. 2-3, Section 2.1.1 - The approach used to determine the site-specific background level for lead has been questioned in the Draft RI comments. This section should be revised to

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reflect this.

The third paragraph on this page should also be revised to reflect the consideration of the split off-site soil samples (TAL analysis) collected by EPA's oversight contractor. The additional data offered by the split samples should help to alleviate some of the uncertainty discussed here.

8. Pg. 2-6, Section 2.1.2, Table 2-2 - Why is sample S72 (317,000 mg/kg lead) not used in these calculations? This sample is described as "soil" on Table 4-6 in the Draft RI Report. Please clarify.

Data is included on Table 4-6 for sample S65 and a surface soil sample. Where is the data presented for S65 at 0.5 feet?

Please clarify the statement in footnote (b) of Table 2-2. What do you mean by stating that "data were pooled to obtain a better estimate of the mean"?

The Table shows that data from OFF-4 and OFF-5 were used to calculate means for Zone 2, or on-site soils contamination at the Site. This approach is not consistent with the use of the data in the Draft RI, where OFF-5 was considered to be a "background" sample. The handling of the soils data, and what is being considered site-related versus non-site-related should be consistent between the RI and the RA.

9. Pg. 2-7, Section 2.1.4, 1st sentence - There is more than just one residence located to the west/southwest of the Tonolli Site. Page 4-4, Section 4.1.3 describes "a few additional homes"... to the west of the Site. Please clarify.

10. Pg. 2-11, Section 2.1.5 - 3rd paragraph - This paragraph should be rewritten upon consideration of the comments submitted on the Draft RI Report. Table 2-5 should also reflect any revisions.

11. Pg. 2-15, Table 2-6 - In the table's second column, Range of Concentrations found in Wells 15D and 12D, it should read 328 ug/l for lead, not 32.8.

12. Pg. 2-17, Section 2.1.6 and Table 2-7 - The handling of the surface water data in the calculation of means or averages appears to be improper. While the occurrence of blank contamination in the filtered field blank may cause the results to be qualified ("B"), or noted as possibly biased high, it does not appear to be appropriate to consider these data points as equivalent to zero. This approach would bias low any calculation of averages for this data set. Please review Section 5.5 and Exhibit 5-4 of the Risk Assessment Guidance for Superfund (Volume 1) which discusses the appropriate method of including qualified

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data in the quantitative risk assessment. Please respond and clarify.

13. Pg. 2-19, Section 2.1.7 - Was the 3,090 mg/kg qualified concentration used to calculate the arithmetic mean?

14. Pg. 2-19, Section 2.2, 1st paragraph - Please clarify why the results from January 10 and 11 are excluded from the averages calculated for the Hi-Vol air sampling. Is there a statistically significant difference between the concentrations measured on those 2 days versus others? Will the data from these 2 days be used to evaluate short-term risk to workers involved in the Site clean-up (in the FS)?

15. Pg. 3-12, 2nd paragraph - EPA has strongly proposed a TBC of 15 ppb for lead in ground water. See the attached memorandum dated June 21, 1990, "Cleanup Level for Lead in Ground Water."

Please cite a reference for the statement made in the last sentence on this page.

16. Pg. 4-7, Section 4.1.4 - last sentence in 1st paragraph - See EPA's comments on Draft RI Report (#19). We have requested additional discussion on this matter, and are not yet convinced that a lack of interconnection has been proven.

17. Pg. 4-8, Section 4.1.4, 1st full paragraph - See EPA's comments on Draft RI (#3). In addition, we have been informed that a well was drilled to supply the Panther Creek Cogeneration Plant with water. At this time, we are not certain whether this well will be used for plant operations or office consumption use, but this would certainly be closer to the Site than 2.5 miles.

18. Pg. 4-9, Section 4.2 - The "modified no-action alternative" evaluation is not acceptable to EPA or PADER. Unless a removal action is taking place right now to address the waste piles, other waste materials, buildings and sumps on the Site, the risks of exposure to these items must be evaluated. The risk assessment must evaluate and quantify baseline risks, meaning a true no-action scenario. Please revise the document accordingly.

19. Pg. 4-10, Section 4.2.1 - The discussion in the 2nd paragraph of this section does not appear to accurately reflect the current use scenario of the Site. The following factors should be included to make this a realistic description:

- EPA's Removal Program funds a security service for the Site, which includes security personnel checking on the Site 8 times a day.

- EPA's Technical Assistance Team contractors visit the Site

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on a bi-monthly basis to monitor and maintain the surface water treatment system.

-Other access to the Site may occur - trespassing has occurred with some frequency, and other persons have been on the Site (i.e., bankruptcy trustee, Tonolli employees or officers).

20. Pg. 4-11, Table 4-3 - The following comments are offered here:

-Inhalation by trespassers of fugitive dusts from surface soil was not evaluated in the report because such an exposure is "of short duration and likely to be insignificant relative to soil ingestion." While this may be true, inhalation of fugitive dust contributes to the overall risk associated with the Site and should, therefore be evaluated.

-Off-site exposure to surface soils and indoor dust should be re-evaluated in light of the additional data generated by EPA's oversight contractor. Data on other indicator contaminants can be assessed and incorporated into this discussion.

-Evaluation of exposure to the waste materials on the site must be quantitatively evaluated for the baseline risk assessment.

-The surface water evaluation should be reviewed for exposure to children and adults who may play or wade in the Nesquehoning Creek.

-The discussion of mechanisms of release for creek sediment should include the seeps which were found along the creek bed, and also to contain high levels of inorganics.

-Exposure to indoor dust should be evaluated qualitatively for an on-site worker. Since the onsite office building was sampled and found to contain measurable levels of lead (See OSC report), and the documents within the building were also found to contain levels of lead, the scenario for someone to come into contact with this should be reviewed. If a light industry were to locate on the Site, we would anticipate that people would enter the office building and come into contact with the lead dust inside.

-Any "no's" listed in the far right column of this table should be fully explained.

21. Pg. 4-13, 2nd paragraph - See comment included above regarding potential uses of the creek for wading and playing. We are not convinced that these possibilities can be ruled out.

22. Pg. 4-14, last paragraph - The statement made here

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regarding the vertical migration of metals from alluvial to bedrock aquifer is very strong in stating that this "cannot" occur. As discussed previously, EPA made comments on this item in the Draft RI, and would like additional information to be provided before we can agree with this conclusion.

23. Pg. 4-15, 1st paragraph on page - See previous comment regarding the incorrect assumption that the waste material would be removed prior to calculation of baseline risks.

24. Pg. 4-15, Summary - Please revise this upon consideration of the above comments.

25. Pg. 4-15, Section 4.2.2 - See comment #5 above. EPA will require a conclusive demonstration that there is little likelihood of the Site being zoned for residential use in the future. Unless this can be demonstrated, exposure to on-site contaminants under a residential future use scenario must be assessed quantitatively, as described by Superfund guidance.

26. Pg. 4-16, Table 4-4 - This section and table should include the potential for a light industry to develop on-site and construct a well for production or consumption. Unless conclusive evidence can be provided to document an enforced restriction of ground water use, or a requirement to hook-up to the public water supply, potential exposure (via ingestion) to on-site workers should be assessed.

27. Pg. 4-17, 2nd full paragraph - This statement assumes there would be no change to the existing paved areas at the Site if a new company were to locate there. This projects a minimal amount of soil disturbance that would be expected to occur during any future development. This does not appear to be realistic since several unknown factors could effect the extent and duration of any onsite construction. This pathway should be reevaluated.

Same page and section - last paragraph - Sufficient information must be presented to assure EPA and PADER that the alluvial ground water would not be used for a potable water supply. This will be quite important to the determination of whether this is a potential exposure pathway that should be quantitatively evaluated.

28. Pg. 4-18, Summary - Please revise this section upon consideration of the above comments.

29. Pg. 4-19, Section 4.3 - 1st paragraph - Please note that the arithmetic mean concentrations are acceptable for use in the IU/BK model. However, the 95% UCL for other indicator contaminant concentrations should be used in the remaining risk assessment calculations.

30. Pg. 4-19, Section 4.3.1 - 2nd paragraph - See comment # 37. Assuming no further disturbance of soils, paved areas, and/or building foundations is not valid. Also, has the RI data been reviewed to show a trend where the concentrations are lower under paved areas? During our review, we cited several locations (in paved and unpaved areas) where high concentrations were detected at great depth. This statement does not appear to be valid.

31. Pg. 4-20, Table 4-5 - The use of specific data points to determine onsite versus offsite soil exposure point concentrations should be presented consistent with the findings in the RI. While this table makes use of OFF-4 and OFF-5 (a background sample in the RI) to calculate onsite exposure point concentrations, it does not include OFF-17 or OFF-19. The latter two locations are also not included in the calculation of the offsite exposure point concentrations due to the fact that they are located north of the creek. Since OFF-17 and OFF-19 are outside of the Site fence, they should be considered as part of the offsite soil population.

32. Pg. 4-23, Section 4.3.4 - If it is not anticipated that the Site will be used in the future for a residential setting, why is this discussion presented here? This pathway is not included in Table 4-4, nor is it discussed in Section 4.2.2.

33. Pg. 4-30, Section 4.4.1 - 1st paragraph - Please revisit the quantitative evaluation of chemicals of potential concern using the split sample data collected by EPA's oversight contractor.

34. Pg. 4-31 to 4-36, Section 4.4.1.1 (Table 4-9) - For the exposure scenario involving ingestion of surface soil by trespassers, it was assumed in the calculations that exposure to older children occurs 4 hours/day, 34 days/year, for 5 years. It should be noted, however, that there appears to be evidence of frequent trespassing at the Tonolli Site, as evidenced by repeated break-ins at the onsite office. Consequently, the foregoing exposure assumptions may not accurately predict the frequency of trespassing that is currently occurring at the site (or the age of the trespassers). It may be more prudent to assume that trespassing occurs at a rate of 2 days/week, 34.4 weeks/year (period when ground is not snow-covered or frozen), for 10 years (ages 8 through 17 years). Although this modification may not have a tremendous impact on the overall prediction of risk, it is probably a more accurate reflection of exposure under the trespassing scenario.

Pg. 4-32 - The approach discussed here for dividing the Site into two distinct areas based on the levels of contaminants in soil is

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not appropriate for the assessment of site-related risks. To justify remediation at any given site, trigger concentrations (contaminant levels that pose unacceptable risks) must be clearly established. In order to establish trigger levels, the risk posed by exposure to the entire site, with equal weight given to any particular area of the site, must be evaluated. The risk assessment should be revised to reflect this.

Pg. 4-33, Table 4-9 -Relative oral absorption factors are presented in Table 4-9 to account for the "unavailability" of contaminants bound to soil. It is acknowledged that contaminants bound to organic materials, such as soil, may or may not be as bioavailable as contaminants bound to food, water or some other inert vehicle used to administer doses of contaminants to laboratory animals. There is no well documented approach for comparing these possible differences in bioavailability. The prudent strategy, therefore, is to assume a similar contaminant bioavailability in soil as occurred in experimental laboratory studies involving inert vehicles. It is recommended that the report utilize this approach for the quantitative evaluation of risk.

35. Pg. 4-34, Section 4.4.1.1 - 3rd full paragraph - This paragraph should explain that lead is also considered a carcinogen by oral ingestion, but that it cannot be fully evaluated due to a lack of a potency factor for it.

36. Pg. 4-34, Section 4.4.1.1 - last paragraph - Please revise this assumption that direct contact with soils in Zone 1 would be prevented under baseline conditions.

37. Pg. 4-44, Section 4.4.1.4, 2nd paragraph - The assumptions used here seem to be a considerable underestimation of the quantity of home-grown fruits and vegetables that may be consumed by residents of a rural area. It is probably more reasonable to assume that consumption of home-grown fruits and vegetables occurs at least 5 days/week during the growing season, and at least twice/week during the next several months (taking storage into consideration). Please revise the risk calculations accordingly.

38. Pg. 5-6, 2nd paragraph - Four in ten million should read four in one hundred million.

39. Pg. 5-20, Section 5.3.2 - This section discusses the prediction that blood lead levels in adult workers are the same as for on-site trespassers. The reason for this similarity in blood lead levels under two completely different exposure scenarios is unclear. An onsite worker is to be exposed to contaminated soils much more frequently and for a longer duration

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than trespassers. Therefore, onsite workers should have higher blood lead levels and, consequently, a higher probability of suffering from adverse health effects, than occasional trespassers. This point should be addressed appropriately in the report.

40. Pg. 5-21, Section 5.4 - Please consider the following items which pertain to the discussion in this section.

- The SEGH model was used in the report to derive remediation levels for lead in soil. However, the SEGH model exists in draft form only. This point has not been mentioned in the report.
- In deriving health-based concentrations for remedial purposes, EPA strives to protect the most sensitive population to the contaminants of concern. In the case of lead, this sensitive subpopulation is young children, not adults.
- The presentation of remediation levels for a particular site is typically reserved for the Feasibility Study report. It is not common to propose clean-up goals in the risk assessment report.
- The remediation (action) level for lead in soil (500-1000 mg/kg) is dictated by guidance from EPA Headquarters, based on recommendations from ATSDR. Therefore, the proposal of clean-up levels for lead in soil (3200 - 5000 mg/kg), as presented in the risk assessment, is unnecessary.
- PADER has also found the proposed clean-up levels for lead to be unacceptable.

41. Pg. 6-1, Section 6.0 - The following comments were provided by EPA's Biological Technical Assistance Group regarding this portion of the document. The comments are general, and are not organized by section or page number.

- The ecological assessment utilizes a comprehensive approach through a discussion of site characterization including the ecological resources; exposure assessment, and the pathways to these resources; hazard identification; and a summary section integrating these assessment in the risk characterization. While the approach and steps are most appropriate, there are concerns on the interpretation, generalities and assumptions in attempting to extrapolate potential ecological impacts to the site environments. These concerns are as follows.
- The BTAG is concerned about the manipulation and calculation of the mean concentration of the contaminants. These manipulations involve the treatment of non-detects and blank contaminants (Section 6.4.1, Pg. 6-30). The concern is that a lower estimate

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of contaminant exposure will result from handling the data as it is presented in the report (i.e., assuming ND for lead samples where blank contamination occurred). See comment # 12 above regarding the RAGS direction in how to handle quantifying data where blank contamination has occurred. The handling and calculations of the surface water data should be revised to reflect proper data handling procedures.

- The report states that coal fines are the major problem with aquatic resources. While this is arguably correct, the contaminants from the Site exacerbate these conditions. Contaminants from the Site would degrade the stream if the coal fines were to disappear either through removal or washing.

- The Clean Water Act, as an ARAR, has as its objective in the preamble to return waters of the U.S.A. to chemical, physical and biological integrity with the further stated objective of restoring conditions that would support a viable ecosystem.

- No approach to chemical sediment quality values is 100% reliable in predicting adverse biological effects. Therefore, consideration should be given to other methods in addition to the AET approach (reference Sediment Classification Methods Compendium, June 1989).

- The risk assessment report states that the Site contaminants have had an adverse impact on ecological resources. The report attempts to minimize these adverse effects by over-emphasizing the lack of knowledge and uncertainties in completing ecological risk assessments. Section 6.4.3, the summary of potential impacts, should not attempt to minimize or question the adverse impacts that are predicted within the text of the report. Since the earlier portions of Section 6.0 predict adverse impacts to ecological receptors, additional information should be provided in the summary to state exactly what impacts are expected, and with what approximate frequency these exposures could occur. This type of evaluation must be provided to assist the decision-maker in considering the ecological aspects of site remediation.

This concludes our comments on the Draft Human Health and Ecological Assessment for the Tonolli Superfund Site. We request that you review the comments provided herein, and make the necessary revisions to the document as soon as possible. We will be available to meet with you to discuss these comments, if you so desire. As you know, we have some limitations on our availability for a meeting, so please contact me immediately to schedule a mutually acceptable date. Due to our current project schedule, it will not be prudent to wait until a meeting occurs to begin revising the document. I would like to see the revised

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Risk Assessment delivered to EPA no later than December 30, 1991.
If you anticipate problems with meeting this time frame, please
contact me.

Please feel free to contact me at (215) 597-1101 if you have
questions regarding this letter, or require additional
information on this matter.

Sincerely,

Donna M. McCartney
Donna M. McCartney (3HW27)
Project Manager

Enclosure

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